AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An actuator for operating a transmission control valve of an automatic transmission apparatus, said actuator comprising:

a stepping motor comprising:

an exterior casing having a first end and a second end in a direction of~~relative to~~ a motor central axis;

a motor main body composed of:

a stator disposed inside said exterior casing; and

a rotor rotatably disposed inside said stator around said motor central axis, said rotor having~~being constructed by mounting~~ magnets constituting magnetic poles mounted to an outer circumferential surface of a cylindrical bush; and

a shaft having a first end and a second end, said shaft being disposed such that said second end thereof projects outward from said exterior casing at a position of said motor central axis;

a housing linked to said second end of said exterior casing in said direction of~~relative to~~ said motor central axis, said housing accommodating a projecting portion of said shaft;

a power conversion mechanism for converting torque acting around said motor central axis of said rotor into a motive force in a direction along said motor central axis; and

an operating member disposed outside said housing in said direction along said motor central axis, said operating member being moved in said direction along said motor central axis by said motive force in said direction along said motor central axis to operate said transmission control valve,

wherein said first end of said shaft is movably engaged with said bush,

wherein said magnets are ~~prepared using~~ rare-earth magnets.

2. (original): The automatic transmission apparatus transmission control valve operating actuator according to claim 1, wherein:

an internal thread portion is formed on an inner peripheral wall surface of said bush, an external thread portion is formed on said first end of said shaft, and said shaft is mounted to said bush by screwing said external thread portion into said internal thread portion such that said second end of said shaft projects outward.

3. (currently amended): The automatic transmission apparatus transmission control valve operating actuator according to Claim 2, wherein:

said power conversion mechanism is provided with:

a rotation-regulating projection portion formed so as to project radially outward on a ~~projecting~~ portion of said shaft that projects~~ing~~ outward from said exterior casing; and

a guide groove disposed so as to extend along an inner wall surface of said housing such that a groove direction of said guide groove is aligned with said direction of said motor central axis, said rotation-regulating projection portion fitting loosely into said guide groove.

4. (original): The automatic transmission apparatus transmission control valve operating actuator according to Claim 2, wherein:

said second end of said shaft projects outward from said housing along said direction of said motor central axis, and said operating member is mounted to a second end portion of said shaft.

5. (original): The automatic transmission apparatus transmission control valve operating actuator according to Claim 4, wherein said operating member is formed integrally by injection molding on a tip portion of said shaft projecting outward from said housing.

6. (original): The automatic transmission apparatus transmission control valve operating actuator according to Claim 1, wherein said rare-earth magnets are neodymium bonded magnets.

7. (currently amended): An actuator for operating a transmission control valve of an automatic transmission apparatus, said actuator comprising:

a stepping motor comprising:

an exterior casing having a first end and a second end in a direction of~~relative to~~ a motor central axis;

a motor main body composed of:

a stator disposed inside said exterior casing; and

a rotor rotatably disposed inside said stator around said motor central axis, said rotor being having~~constructed by mounting~~ magnets constituting magnetic poles mounted to an outer circumferential surface of a cylindrical bush, and an internal thread portion being formed on an inner peripheral wall surface of said bush; and

a shaft having a first end and a second end, said shaft being disposed such that said second end thereof projects outward from said exterior casing at a position of said motor central axis by screwing an external thread portion formed on said first end of said shaft into said internal thread portion of said bush;

a housing linked to said second end of said exterior casing in said direction of~~relative to~~ said motor central axis, said second end of said shaft projecting outward from said housing along said direction of said motor central axis;

a power conversion mechanism for converting torque acting around said motor central axis of said rotor into a motive force in a direction along said motor central axis by regulating rotation of said shaft so as to move said shaft in said direction along said motor central axis; and

an operating member mounted to a second end portion of said shaft projecting outward from said housing, said operating member being moved in said direction along said motor central axis to operate said transmission control valve,

wherein a penetrating aperture is disposed through said first end of said exterior casing in ~~relative to~~ said direction of said motor central axis so as to communicate between an interior portion of said bush and an exterior portion of said exterior casing, and a filter is disposed so as to cover said penetrating aperture from said second end of said exterior casing ~~relative to~~in said direction of said motor central axis.

8. (original): The automatic transmission apparatus transmission control valve operating actuator according to Claim 7, wherein said magnets are rare-earth magnets.

9. (original): The automatic transmission apparatus transmission control valve operating actuator according to Claim 8, wherein said rare-earth magnets are neodymium bonded magnets.

10. (currently amended): The automatic transmission apparatus transmission control valve operating actuator according to Claim 7, wherein:

said power conversion mechanism is provided with:

a rotation-regulating projection portion formed so as to project radially outward on a ~~projecting~~ portion of said shaft that projects~~ing~~ outward from said exterior casing; and

a guide groove disposed so as to extend along an inner wall surface of said housing such that a groove direction of said guide groove is aligned with said direction of said motor central axis, said rotation-regulating projection portion fitting loosely into said guide groove.

11. (original): The automatic transmission apparatus transmission control valve operating actuator according to Claim 7, wherein said operating member is formed integrally by injection molding on a tip portion of said shaft projecting outward from said housing.

12. (new): The actuator according to claim 1, further comprising:

a cover penetrating aperture disposed on a first end of said exterior casing.

13. (new): The actuator according to claim 1, further comprising:

a filter disposed inside said exterior casing adjacent to said cover penetrating aperture.